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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/092,170      | 03/06/2002  | John G. Kennedy      | 5681-10100          | 9235             |

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11/02/2005

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EXAMINER

HOSSAIN, TANIM M

ART UNIT

PAPER NUMBER

2145

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                                  |  |
|------------------------------|-------------------------------|----------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/092,170 | Applicant(s)<br>KENNEDY, JOHN G. |  |
|                              | Examiner<br>Tanim Hossain     | Art Unit<br>2145                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/11/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-15, 22-31, and 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Chirashnya (U.S. 2002/0019870).

As per claim 1, Chirashnya teaches a system comprising: a network system comprising a plurality of network components (paragraph 0001); a host computer system coupled to the network system, wherein the host computer system is configured to: perform system discovery to generate data indicative of a configuration of the plurality of network components (0003); detect a failure of one of the components included in the plurality of network components (0015); in response to identifying the failed component, update an availability of the network system using the data indicative of the configuration of the plurality of network components (0034, 0047, 0048, 0051, 0059); and store data indicative of the availability of the network system (0019).

As per claim 2, Chirashnya teaches the system of claim 1, wherein the host computer system is configured to use the updated availability to calculate a risk of the network system becoming unavailable during one or more exposure periods following the failure and prior to a repair or replacement of the failed component, and store data indicative of the risk (0024, 0035).

As per claim 3, Chirashnya teaches the system of claim 2, wherein the data indicative of a risk includes data indicative of a probability of the network system becoming unavailable during each of the one or more exposure periods (0010).

As per claim 4, Chirashnya teaches the system of claim 2, wherein the data indicative of the risk includes data indicative of an expected number of system failures per a given population for each of the one or more exposure periods (0026).

As per claim 5, Chirashnya teaches the system of claim 2, wherein the host computer system is configured to compare the risk of the network system becoming unavailable for a first exposure period of the one or more exposure periods to a threshold value (0020, 0022, 0027, 0063); and if the risk is higher than the threshold value, determine an acceptable exposure period, wherein the risk of the network system becoming unavailable during the acceptable exposure period is lower than the threshold value, and provide an indication of the acceptable exposure period (0054, 0063).

As per claim 6, Chirashnya teaches the system of claim 1, wherein the host computer system is configured to update the availability of the network system by calculating the instantaneous availability of the plurality of network components by calculating the instantaneous availability of the plurality of network components (0011, 0048).

As per claim 7, Chirashnya teaches a computer readable medium comprising program instructions computer executable to: receive data indicating a configuration of components included in a network system; receive an indication of a failure of one of the components in the network system; compute an availability of the network system from the data in response to the failure of one of the components, and store availability data comprising data indicative of the availability of the network system (0003, 0005, 0019, 0030, 0034, 0047, 0048, 0051, 0059).

As per claim 8, Chirashnya teaches the computer readable medium of claim 7, wherein the availability data comprises a table comprising one or more entries, wherein each entry in the table indicates a risk of the network system being disrupted during a respective exposure period, following the failure and prior to a repair or replacement of the failed component, wherein the risk depends on the availability of the network system (0019, 0033, 0050).

As per claim 9, Chirashnya teaches the computer readable medium of claim 8, wherein each entry in the table indicates a probability of the network system being disrupted during the respective exposure period (0033).

As per claim 10, Chirashnya teaches the computer readable medium of claim 8, wherein each entry in the table indicates an expected number of system failures per a given population for the respective exposure period (0026).

As per claim 11, Chirashnya teaches the computer readable medium of claim 8, wherein a first exposure time of the one or more exposure period is an estimated period to replace the one of the components that failed (0054).

As per claim 12, Chirashnya teaches the computer readable medium of claim 7, wherein the program instructions are computer executable to evaluate the risk of the network system

being disrupted by comparing the risk of the network system being disrupted for at least one of the one or more exposure periods to a threshold risk (0047, 0063).

As per claim 13, Chirashnya teaches the computer readable medium of claim 12, wherein the program instructions are computer executable to store an indication of an unacceptably high risk in response to the risk of the network system being disrupted for at least one of the one or more time periods being greater than the threshold risk (0048).

As per claim 14, Chirashnya teaches the computer readable medium of claim 13, wherein the indication of the unacceptably high risk includes an indication of an acceptable exposure period (0054).

As per claim 15, Chirashnya teaches the computer readable medium of claim 14, wherein the program instructions are computer executable to provide the acceptable exposure period to a monitoring device (0059).

As per claim 22, Chirashnya teaches the computer readable medium of claim 7, wherein the program instructions are computer executable to compute the availability of the network system by computing the instantaneous availability of the network system (0010).

Claims 23, 24, 25, 26, 27, 28, 29, and 30 are rejected on the same bases as claims 1, 2, 3, 4, 5, 13, 14, and 15 respectively.

As per claim 31, Chirashnya teaches the method of claim 24, wherein a first exposure time of the one or more exposure times is an estimated time to replace the one of the components that failed (0054).

As per claim 33, Chirashnya teaches the method of claim 23, wherein said computing comprises calculating the instantaneous availability of the network system (0011).

As per claim 34, Chirashnya teaches a system comprising: a network system comprising a plurality of components; means for performing system discovery for the network system, wherein the means for performing system discovery generate data indicative of a configuration of the network system; means for detecting a failure of one of the plurality of network components; and means for calculating an availability of the network system from the data generated by the means for performing system discovery, wherein the means for calculating an availability calculate the availability in response to the means for detecting a failure detecting that a first one of the plurality of network components has failed, wherein the means for calculating the availability store data indicative of the availability of the network system (0011, 0054, 0019, 0033, 0050).

Claim 35 is rejected on the same basis as claim 34.

As per claim 36, Chirashnya teaches the system of claim 35, wherein the first network device is a host computer system (0006).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-19, 32, 37, 38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chirashnya (U.S. 2002/0019870).

As per claims 16-19, Chirashnya teaches the system of claim 7, but does not specifically teach the use of block diagram analysis, fault tree analysis, Markov chain analysis, and Monte Carlo analysis. These types of analyses are merely different statistical risk analyses. It would have been obvious to one of ordinary skill in the art at the time of the invention to include these various types of analysis. Chirashnya chooses to use a Bayesian analysis, and therefore differing analyses constitute a design choice rather than a patentable distinction, because one of ordinary skill in the art at the time of the invention would have known to use whichever types of probability analyses as he/she sees fit.

Claim 32 is rejected on the same basis as claim 16.

As per claims 37 and 38, Chirashnya teaches the system of claim 35, but does not specifically teach that the network device is an array controller or network switch. It would have been obvious to one of ordinary skill in the art at the time of the invention to include specifically these network components. The motivation for doing so lies in the fact that either of these components have the ability to monitor and control the network for functionality probabilities. Chirashnya does not limit the use of any network component, which would render the inclusion of an array controller or network switch abundantly obvious to one of ordinary skill in the art at the time of the invention.

As per claim 40, Chirashnya teaches the system of claim 1, wherein said detecting the failure comprises: monitoring performance of one of the components (0009), but does not specifically teach the determination that a component has failed if its performance falls below a



threshold. Official notice is taken that the inclusion of a threshold value to determine component failure is well known in the art, wherever network performance is being monitored. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the well-known component of a failure threshold to determine whether or not the component is failing.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chirashnya in view of Rogers (U.S. 2003/0048782).

As per claim 20, Chirashnya teaches the system of claim 7, but does not specifically teach the calculation of non-redundant components by multiplying probabilities. Rogers teaches the calculation of independent non-redundant components' availabilities by multiplication (page 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the independent calculation of non-redundant components as taught by Rogers in the system of Chirashnya. The motivation for doing so lies in the fact that having an additional method of probability calculation would lend itself to a more robust invention, capable of handling multiple calculations, leading to additional analysis. Both inventions are from the same field of endeavor, namely the probabilistic monitoring of computer networks.

As per claim 21, Chirashnya-Rogers teaches computer readable medium of claim 20, wherein at least one of the non-redundant components includes a plurality of redundant components (page 1).

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chirashnya in view of Noy (U.S. 2003/0051049).

As per claim 39, Chirashnya teaches the system of claim 1, but does not specifically teach that the system discovery entails a sending a request for identification of the network component, and returning an identifier in response. Noy teaches the unique identification of a network component by request (0008). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the specific identification of a network component through system discovery, as taught by Noy in the system of Chirashnya. The motivation for doing so lies in the fact that identification of the components would enable more efficient monitoring of the components, which would facilitate response in case of a failure. Both inventions are from the same field of endeavor, namely the monitoring of network components.

### *Response to Arguments*

Applicant's arguments filed on August 11, 2005 have fully been considered, but are not persuasive.

a. Applicant asserts that Chirashnya does not specifically teach the updating of the availability of the network system using configuration data gathered in a system discovery process. Examiner respectfully disagrees. In receiving an alarm indicating a fault in the network system, which sets forth which component failed, for example, the user of Chirashnya's system is alerted of the network's availability, by the very fact that the user knows which component failed, which constitutes a knowledge of the network system's availability.

b. The calculation of a probability of the system's failure in Chirashnya constitutes a risk of the network system becoming unavailable during the exposure period.

c. Discussion of a threshold value is set forth in the new treatment of claim 5.

d. Claims 16-19, 32, 37, and 38 constitute obvious design choices in view of Chirashnya. As stated above, because Chirashnya teaches the use of a Bayesian risk analysis, the use of other statistical risk analyses is rendered obvious to one of ordinary skill in the art. The use of a switch and network array is also obvious because of their abundant use in the art.

e. The provisional application of the Rogers application contains the exact same teachings as the published Rogers application used to reject claims 20 and 21.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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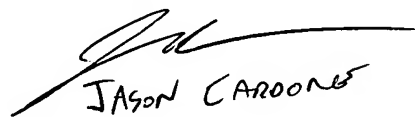
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanim Hossain whose telephone number is 571/272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571/272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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